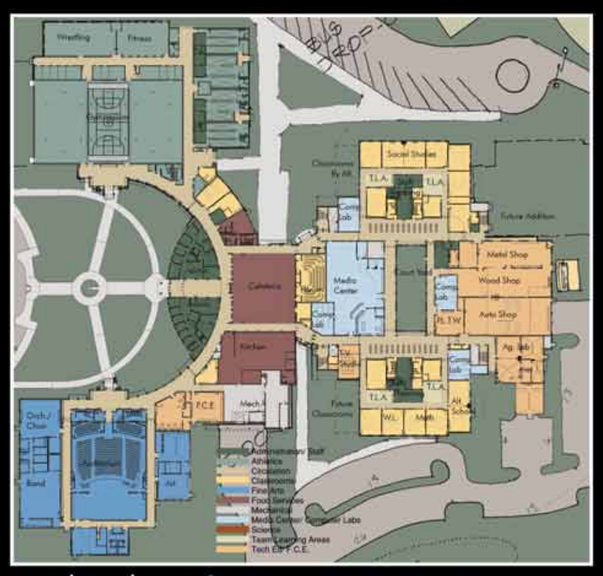
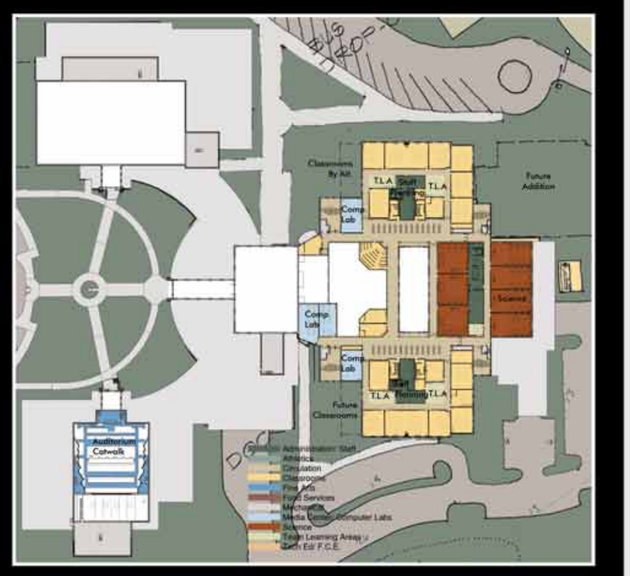
NEW RICHMOND
HIGH SCHOOL





ATS&R
PLANNERS / ARCHITECTS / ENGINEERS

2008 ENERGY STAR CHALLENGE: ARCHITECTS DESIGN A BETTER WORLD

DESIGNED TO EARN THE ENERGY STAR

The New Richmond School District indicated in early design process that they wanted an energy efficient design that could be submitted for LEED certified rating. An energy design charrette was held to review a variety of options to be considered for energy modeling to verify cost effectiveness as follows:

Option 1. Side daylighting - 15 square foot perimeter, stepped dimmer

Option 2. Condensing modular boilers

Option 3. Water Cooled Centrifugal Chillers (2)

Option 4. Thermal Storage - Single Air-Cooled Screw Chiller (400 tons)

Option 5. Thermal Storage - Single Water-Cooled Screw Chiller (400 tons)

Based on commitment for energy savings and reasonable payback, the New Richmond School District accepted the following options: Condensing modular boilers, thermal storage and a single water-cooled screw chiller.

Also as part of the energy design charrette, the following energy features were included as energy features that have proven cost effectiveness:

1. Occupied lighting control for the class rooms and the hallways using motion detectors.

2. The building automation system will integrate the motion detector signal to the air supply for reset the space airflow to the unoccupied air flow settings to follow the minimum outside air requirements for ASHRAE Standard 62n.

3. Energy recovery using total energy recovery wheels for the minimum outside air for the classroom areas.

4. Variable air volume systems for most of the classroom areas of the building.

5. Positive displacement air distribution in the cafeteria, media and forum rooms.

6. Variable speed pumping on the heating water and cooling water systems.

7. CO2 monitoring and control is being used in the gymnasium, auditorium and cafeteria.

8. Monitoring of the minimum outside air to each air handling units system.

9. Windows will have a .35 U value.

With a ENERGY STAR design rating of 88, the energy use intensity (EUI) is 105.1 kBtu/sf/yr, with a saving of 19,973,940.8 kBtu (based on EPA targeted energy performance of 50) and savings of 1,373 tons of CO2 emissions which for this project saved 39% reduction in CO2 emissions.

- Location: New Richmond, Wisconsin
- Energy Cost/Square Foot: $.81
- Space Type: High School
- Total Square Footage of Building: 295,000